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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,464	07/03/2001	Fabrice Lecomte	612.37608VX1	3646
20457	7590	06/17/2004	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			MCHENRY, KEVIN L	
			ART UNIT	PAPER NUMBER
			1725	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

<b>Application No.</b> 09/897,464	<b>Applicant(s)</b> LECOMTE ET AL.	
<b>Examiner</b> Kevin L McHenry	<b>Art Unit</b> 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/3/01</u> . | 6) <input type="checkbox"/> Other: ____  |

***Specification***

1. The disclosure is objected to because of the following informalities:

On page 2, line 3 solvent is misspelled.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 5 uses the language "it comprises" in line 1 of claim 5. This language is indefinite because it is unclear what "it" is referring to. For examination purposes the examiner interpreted this language to mean "the device".

5. Claim 5 recites the limitation "the thickness" in line 2 of claim 5. There is insufficient antecedent basis for this limitation in the claim. This language is also indefinite because it is unclear what this is a thickness of. For examination purposes the examiner interpreted this language to mean "a thickness of the layer of solid by-products".

6. Claim 5 recites "or control means ( $V_1$ ,  $V_2$ )" in line 3 of claim 5. This language is indefinite because the relationship of the control means to the device is not stated; it is unclear how the control means functions to regulate the device and how the control

Art Unit: 1725

means is related to the device. For examination purposes the examiner interpreted this language to be deleted from claim 5.

7. Claim 6 uses the language "it comprises" in line 1 of claim 6. This language is indefinite because it is unclear what "it" is referring to. For examination purposes the examiner interpreted this language to mean "the device".

8. Claim 6 recites the limitation "the liquid sulfur" in line 3 of claim 6. There is insufficient antecedent basis for this limitation in the claim. For examination purposes the examiner interpreted this language to mean "liquid sulfur".

9. Claim 7 uses the language "it comprises" in line 1 of claim 7. This language is indefinite because it is unclear what "it" is referring to. For examination purposes the examiner interpreted this language to mean "the device".

10. Claim 7 recites the limitation "said part of stream F<sub>2</sub>" in line 2 of claim 7. There is insufficient antecedent basis for this limitation in the claim. For examination purposes the examiner interpreted this language to mean "a part of solvent stream F<sub>2</sub>".

11. Claim 7 recites the limitation "said part of solvent separated from the liquid sulfur" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. For examination purposes the examiner interpreted this language to mean "a part of solvent separated from liquid sulfur".

### ***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1725

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 2, 4, and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/00226.

WO 97/00226 teaches a device to clean and recycle by-products from a gaseous effluent, such as from a Claus process, that uses a solvent and a catalyst. The device includes a contactor reactor, a separation zone, a line for delivery of the gas, a line for delivery of the solvent and catalyst, a line for extraction of a cleaned gas, a line for recycling solvent to the reactor, and a line for extraction of a fluid containing the solvent and by-products that is connected to a layer of solid by-products in the separation zone. The device also includes a processing zone, or filter, for removing sulfate by-products from the solvent. The separation zone may be situated in the lower part of the contactor reactor and the contactor reactor may be a random packing type. (See WO 97/00226; Figures 1-3 and abstract). The examiner notes that Smith et al. (U.S.P. 6,413,488) is a U.S. equivalent of WO 97/00226.

14. Claims 1, 2, 4, 6, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Trentham et al. (U.S.P. 4,387,037).

Trentham et al. teach a device to clean and recycle sulfur and by-products from a gaseous effluent, such as from a Claus process, that uses solvent. The device includes a contactor reactor, a separation zone, a line for delivery of the gas, a line for delivery of the solvent and catalyst, a line for extraction of a cleaned gas, a line for recycling solvent to the reactor, and a line for extraction of a fluid containing the solvent and by-products

Art Unit: 1725

that is connected to a layer of solid by-products in the separation zone. The separation zone may be situated in the lower part of the contactor reactor. The device also includes an adsorption means to remove salts from the solvent stream. (see U.S.P. 4,387,037; Figure; column 3, lines 54-65; column 6, lines 3-8, 35-37, 45-68; column 7, lines 1-5, 23-26, 61-68; column 8, lines 1-27, 55-68; column 9, lines 1-18).

The examiner notes the intended use of flowing solvent with a catalyst through the claimed device. Intended use has been continuously held not to be germane to determining the patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530. Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim, *Ex parte Thibault*, 164 USPQ 666. Inclusion of the material worked upon by a structure being claimed does not impart patentability to the claims, *In re Otto et al.*, 136 USPQ 458. A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitation of that claimed, *Ex parte Masham*, 2 USPQ 2d 1647. The examiner further notes that the device taught by *Trentham et al.* is capable of performing the intended use of processing solvent with a catalyst, as is in WO 97/00226.

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1725

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/00226 as applied to claims 1, 2, 4, and 6-9 above, and further in view of Townsend (U.S.P. 2,881,047).

WO 97/00226 teaches the device taught above in section 13. However, this reference does not teach a control means for controlling a thickness of a by-product layer and/or means for controlling the position of the layer of by-products.

Townsend teaches a device for cleaning gaseous mixtures with a contact reactor. Townsend teaches that a means is used to control the liquid level in the bottom of the reactor. (See U.S.P. 2,881,047; Figure 9; column 7, lines 67-72).

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have modified the device shown above by the teachings of Townsend. One would have been motivated to use a liquid level control to maintain the level of liquid sulfur in the bottom of the reactor at a suitable level so that it did not raise too high and exit through the solvent extraction means.

### ***Allowable Subject Matter***

17. Claim 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 1725

18. The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be a nonobvious improvement over the invention of WO 97/00226. The improvement comprises extraction means that are arranged on a line connecting the reactor and the separation zone.

### ***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith et al. (U.S.P. 6,413,488), LeComte et al. (U.S.P. 5,935,547), Hasebe et al. (U.S.P. 5,389,351), and Viltard et al. (U.S.P. 5,951,961) are cited of interest for illustrating the state of the art in gas cleaning devices.

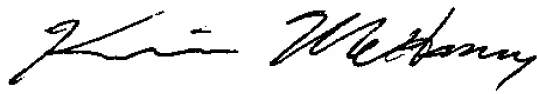
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin L McHenry whose telephone number is (571) 272-1181. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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